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10/069,347	06/07/2002	Eric Atherton	FHW-101US	7913

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BOSTON, MA 02109

EXAMINER

10
OLSEN, KAJ K

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,347

Applicant(s)

ATHERTON, ERIC

Examiner

Kaj Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,10 and 12 is/are rejected.
- 7) ☒ Claim(s) 5,11,13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by French (USP 3,788,962).

3. French discloses a corrosion monitor comprising a substantially inert reference electrode 3 and a working (i.e. specimen) electrode 1 composed of the material to be monitored (col. 4, lines 50-56). French also discloses a circuit 13 that controls in part the potential difference between the working and reference electrode and that comprises an amplifier 14 that is being operated as a voltage follower (i.e. it's an amplifier operated with unity gain (col. 7, lines 47-51)). With respect to the claim language stating the voltage reflects the previous values of current flowing between the electrodes, that is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability. However, the circuit containing the amplifier 14 is feedback controlling the potential across the electrodes and receives as its input the current value from the working electrode. Hence the output of circuit 13 appears to provide a voltage that reflects the previous current flowing between the electrodes (i.e. the current before being feedback controlled to a new current).

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4. With respect to claim 2, having the voltage follower apply a particular voltage is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability.

5. With respect to new claim 12, element 11 is an ammeter.

6. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Weisstuch et al (USP 3,716,460).

7. Weisstuch discloses a corrosion monitor comprising a pair of electrodes (110, 112) and an electronic circuit for the measurement (fig. 2). Said circuit is able to connect electrodes 110 and 112 across a capacitor 138 when switch 122 is in the lower position (see fig. 2). Capacitors inherently block DC current to zero while allowing AC currents to continue to flow. Hence the circuit of fig. 2 when switch 122 is lowered inherently constitutes a circuit that reduces DC current to essentially zero while allowing a naturally occurring AC current noise to flow unhindered as required by the claim. With respect to the electronic circuitry monitoring the AC current, that is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 1, 2, 7, 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as obvious over Weisstuch in view of Jovancicevic (USP 6,280,603).

10. With respect to claims 1 and 10, Weisstuch discloses a corrosion monitor comprising a reference electrode (12, 112) and a working electrode (10, 110) constructed out of a material to be monitored (col. 4, lines 40-44). Weisstuch also discloses a voltage follower (18, 118) which is being utilized to control the voltage being applied between the electrodes (fig. 1 and 2). With respect to the voltage reflecting the previous value of the current flowing between the electrodes, that is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability. With respect to the reference electrode being substantially inert, Weisstuch never explicitly teaches this element (although the reference does identify only the working electrode as being corrodible (col. 4, lines 41-44). However, Jovancicevic discloses in an alternate corrosion meter that the reference electrode be preferably constructed out of inert material (col. 3, lines 37-41). The use of an inert reference electrode would prevent the reference electrode from limiting the life of the corrosion monitor, it would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Jovancicevic for the corrosion monitor of Weisstuch in order to prevent premature failure of the electrode system.

11. With respect to claims 2, having the voltage follower apply a particular voltage is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability.

12. With respect to claim 7, Weisstuch taught all the limitations of the claim, but did not explicitly teach the use of an inert reference electrode (although the reference does identify only

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the working electrode as being corrodible (col. 4, lines 41-44). However, Jovancevic discloses in an alternate corrosion meter that the reference electrode be preferably constructed out of inert material (col. 3, lines 37-41). The use of an inert reference electrode would prevent the reference electrode from limiting the life of the corrosion monitor, it would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Jovancevic for the corrosion monitor of Weisstuch in order to prevent premature failure of the electrode system.

13. With respect to claim 8, see Jovancevic, col. 3, lines 26-37.

14. With respect to new claim 12, element 24 of Weisstuch is an ammeter.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frenck in view of Jovancevic.

16. Frenck set forth all the limitations of claim 10 and taught the use of a third (i.e. auxiliary) electrode, but did not explicitly teach the use of a substantially inert material for this third electrode. However, Jovancevic discloses in an alternate corrosion meter that the auxiliary (i.e. the counter) electrode be preferably constructed out of inert material (col. 3, lines 26-37). The use of an inert counter electrode would prevent this electrode from limiting the life of the corrosion monitor, it would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Jovancevic for the corrosion monitor of Frenck in order to prevent premature failure of the electrode system.

Response to Arguments

17. Applicant's arguments filed on 7-22-2003 have been fully considered but they are not persuasive. With respect to the rejection of claims 1-3 over French, applicant traverses this rejection. In particular, applicant urges that the limitation of claim 1 drawn to the voltage reflecting the previous values of the current carries patentable weight. This is not persuasive. Claim 1 is drawn to an apparatus and apparatus claims must be defined based on what the structure is and not what the structure does. The limitation "wherein the voltage reflects previous values of a current flowing between the electrodes" is clearly functional language that has no explicit structure associated with it. This language is merely stating what the applicant intends the voltage to be a function of. This intention, absent any clearly defined structure drawn to that intention, is not to be given further due consideration when the claim is drawn to an apparatus.

18. In its discussion of French, Applicant urges that the summing amplifier 9 takes the current value representing the difference between the reference electrode and the working electrode and applies that to a separate power electrode. Based on this, applicant urges that French does not retain historical information regarding the current between the two electrodes. Ignoring for the sake of argument that this language in question is only the intended use (see above), the examiner still finds this unpersuasive. First, the claims do not specifying anything about "historical information". Second, it is unclear why the fact that French drives the voltage to be placed across the reference and working electrodes utilizing a third electrode reads free claim 1. The claim only states that the device be "adapted" to apply a voltage across the working and reference electrodes. French teaches that. In particular, amplifier 9 (which gets its input in

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part from voltage follower 14) drives the third (i.e. power) electrode so that a given potential difference is established across the reference and working electrodes (col. 5, lines 5-45). The examiner finds nothing in the claims that restrict the establishment of a voltage (i.e. potential) across the working and reference electrodes based the use of a third electrode.

19. With respect to the “historical information” (i.e. previous values), the examiner would point out that Frenck is a continuous feedback device (like the instant invention) and feedback devices continually adjust themselves based on measured values. In particular, currents values reported by voltage follower 14 at one point in time are utilized to drive the voltage that will next be applied (i.e. experienced) by the working electrode. Although the examiner recognizes that Frenck constitutes a different scheme for utilizing previous currents to drive voltage levels to that utilized by the instant invention, that distinction between the two schemes is not currently being claimed. In contrast, applicant urges this current monitored by Frenck represents the current (in time that is) value of the current and not the previous value of current. If the examiner were to accept for the moment the applicant’s interpretation of time here, then it unclear how the voltage follower of the instant invention utilizes previous current values. In particular, applicant measures the current at element 18 and feeds that back into the voltage follower via the integrator. There is no delay means other than any delay inherent in the electrical circuit. There is no accessing of historical current information. The integrator doesn’t appear to be a device that provides historical information any more than any of the circuits of Frenck would. It is merely integrating whatever current is currently in the circuit. However, the examiner would contend that the instant invention utilizes previous information for the same reason that the

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examiner is arguing that French utilizes previous information, namely because the previous current is fed back to arrive at a new voltage.

20. With respect to claim 1 and the rejection of Weisstuch in view of Jovancicevic, applicant both urges that the limitations drawn to the previous values of current has patentable weight and urges that the teaching of Weisstuch does not read on said claim language. On applicant's second point, their arguments were persuasive. Weisstuch relies on open circuit potentials between the reference and working electrodes and this would not read on the voltage reflecting previous values of the current. However, Applicant's first point is unpersuasive for the same reasons set forth above with respect to French, namely that the language in question constitutes only the intended use of the device and that language is not to be given further due consideration.

21. With respect to claim 6, applicant has amended the claim to state that the circuitry "monitors the AC current noise". However, this still doesn't positively recite structure drawn to the monitoring of AC current noise. Applicant should specify that the circuit is --configured-- to monitor the AC current noise.

Allowable Subject Matter

22. Claims 5, 11 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

23. The following is a statement of reasons for the indication of allowable subject matter: these claims are free of the prior art for the same reasons set forth in the previous office action.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (703) 305-0506. The examiner can normally be reached on Monday through Thursday from 7:00 AM-4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached at (703) 308-3322.

When filing a fax in Group 1700, please indicate in the header "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing

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of your papers. The fax number for regular communications is (703) 305-3599 and the fax number for after-final communications is (703) 305-5408.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Kaj K. Olsen', with a long horizontal flourish extending to the right.

Kaj K. Olsen
Patent Examiner
AU 1753
September 25, 2003